Complete Summary

GUIDELINE TITLE

Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling.

BIBLIOGRAPHIC SOURCE(S)

National Institute for Health and Clinical Excellence (NICE). Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 Mar. 37 p. (Public health intervention guidance; no. 2).

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Physical inactivity

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Counseling
Prevention

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Nursing
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Occupational Therapists
Patients
Pharmacists
Physical Therapists
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To help practitioners deliver effective interventions that will increase people's physical activity levels and therefore benefit their health

TARGET POPULATION

Adults in England who do not achieve at least 30 minutes moderate activity on five or more days of the week

INTERVENTIONS AND PRACTICES CONSIDERED

1. Brief interventions in primary care (opportunistic advice, discussion, negotiation or encouragement)
2. Exercise referral schemes, including directing individuals to a service offering an assessment of need, development of a tailored physical activity programme, monitoring of progress and a follow-up
3. Pedometers*
4. Referral to community-based cycling and walking schemes*

*Note: Exercise referral schemes, pedometers, and community-based cycling and walking schemes are recommended only as part of clinical trials to determine effectiveness.

MAJOR OUTCOMES CONSIDERED

- Levels of physical activity
- Level of physical fitness
- Cost-effectiveness

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Note from the National Guideline Clearinghouse (NGC): Key questions were established as part of the scope. They formed the starting point for the reviews of evidence and facilitated the development of recommendations by the Public Health Interventions Advisory Committee (PHIAC). Refer to appendix D in the original guideline document for a list of the key questions.

Evidence of Effectiveness

Four separate reviews of effectiveness were conducted, one for each intervention (i.e., brief interventions in primary care, pedometers, exercise referral schemes and community-based exercise programmes for walking and cycling). (See the "Availability of Companion Documents" field.)

Identifying the Evidence

Separate searches were conducted for each review. English language papers published between 1990 and June 2005 were identified by searching the following electronic databases: Medline, Pubmed, Embase, Cinahl, PsychInfo, and Sports Discuss. In addition, the TRIS Transport Database was searched for the walking and cycling review.

Details of the search terms and strategies are included in the reports of each review. (Refer to the "Availability of Companion Documents" field.)

Selection Criteria

Studies were included if:

- A controlled research design was used.
- A measure of physical activity or fitness was reported, both at baseline and at least 6 weeks after the start of the intervention.

Studies were excluded if:

- They were not studies of interventions.
- The interventions described fell outside the scope.
- They did not cover an adult population.
- There was no control or comparison group.
- They did not present pre- and post- intervention physical activity outcomes.
- Follow-up was less than six weeks.

Economic Appraisal

The economic appraisal consisted of a review of economic evaluations and a cost-effectiveness analysis.

Review of Economic Evaluations

In addition to papers identified through the reviews of effectiveness (see the "Availability of Companion Documents" field), separate searches were conducted on the National Health Services Economic Evaluation Database (NHSEED) (1994 to August 2005) and the Health Economic Evaluation Database (HEED) (1958 to August 2005).

Studies were included if they assessed the cost effectiveness of one of the four interventions. Studies were excluded if they:

- Were not included in the scope
- Did not aim to change the participant's lifestyle in line with the Chief Medical Officer's (CMO) guidelines
- Simply investigated different ways of running an intervention

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Study Type

1 Meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs (including cluster RCTs)

2 Systematic reviews of, or individual, non-randomised controlled trials, case-control studies, cohort studies, controlled before-and-after (CBA) studies, interrupted time series (ITS) studies, correlation studies

3 Non-analytical studies (for example, case reports, case series).

4 Expert opinion, formal consensus

Study Quality

++ All or most criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter

+ Some criteria have been fulfilled. Those that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions

- Few or no criteria have been fulfilled. The conclusions of the study are thought likely or very likely to alter

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Evidence of Effectiveness

Quality Appraisal

Two reviewers assessed the methodological rigour and quality of papers using predetermined National Institute for Health and Clinical Excellence (NICE) methodology checklists. Each study was described by study type (categorised as types 1 to 4) and graded (++, +, -) to reflect the risk of potential bias arising from its design and execution (see the "Rating Scheme for the Strength of the Evidence" field above). The main reasons for studies being assessed as (-) were:

- Lack of randomisation
- Analysis not done on an "intention to treat basis"
- Unvalidated physical activity measures
- Outcome assessment was not blind
- No adjustment for baseline physical activity measure

Study type and quality were described together. For example, as (1++) or (2-).

The studies were also assessed for their applicability to the United Kingdom.

Summarising the Evidence and Making Evidence Statements

The review data was summarised in evidence tables. Outcomes of interest included both non-validated and validated measures (such as self-reported physical activity and measured V_{O2max} - a measure of maximal oxygen used). Where a measure such as self-report has used a non-validated technique, this is highlighted in the quality assessment.

The effectiveness of each intervention was examined:

- In the short term (6 to 12 weeks)
- In the longer term (over 12 weeks)
- Over a long timeframe (for example, 1 year)

The findings from the reviews were synthesised and used as the basis for a number of evidence statements relating to each key question. The evidence statements reflect the strength (quantity, type, and quality) of evidence and its applicability to the populations and settings in the scope.

Economic Analysis

Included studies were assessed for quality using a checklist based on predetermined criteria. Inclusion of quality-adjusted life years (QALYs) as an outcome measure was essential at this stage. As with the reviews of effectiveness, studies were then given a score (++, +, -) to reflect the risk of potential bias arising from its design and execution. The evidence tables for the cost-effectiveness review are included in the review (see appendix E of the original guideline document).

Usually studies assessed as (-) lacked sensitivity analysis.

Cost-Effectiveness Analysis

An economic model was constructed to incorporate data from the reviews of effectiveness and cost effectiveness. The aim was to estimate the impact of a brief intervention in primary care: on participants' health and quality of life and cost savings for the National Health Service (NHS). The model used estimates of average QALYs gained over the simulation time period. (See review and modelling report for further details [see "Availability of Companion Documents" field].)

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

How Public Health Interventions Advisor Committee (PHIAC) Formulated the Recommendations

At its first meeting, in December 2005, PHIAC considered the evidence of effectiveness and cost effectiveness and comments from stakeholders to determine:

- Whether there was sufficient evidence (in terms of quantity, quality, and applicability) to form a judgement
- Whether, on balance, the evidence demonstrates that the intervention is effective or ineffective, or whether it is equivocal
- Where there is an effect, the typical size of effect

PHIAC developed draft recommendations through informal consensus, based on the following criteria.

- Strength (quality and quantity) of the evidence of effectiveness and its applicability to the populations/settings referred to in the scope
- Effect size and potential impact on population health and/or reducing inequalities in health
- Cost effectiveness (for the National Health Service (NHS) and other public sector organisations)
- Balance of risks and benefits
- Ease of implementation and the anticipated extent of change in practice that would be required

PHIAC also considered whether research should be a condition for a recommendation where evidence was lacking.

Where possible, recommendations were linked to an evidence statement(s)—see appendix A in the original guideline document for details. Where a recommendation was inferred from the evidence, this was indicated by the reference "IDE" (inference derived from the evidence).

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Cost-effectiveness Evidence for Brief Interventions in Primary Care

A cost-effectiveness analysis was carried out for brief interventions in primary care, following the reviews of effectiveness and cost effectiveness (refer to the "Availability of Companion Documents" field and appendices D and E of the original Guideline Document).

When comparing the intervention with no intervention, the incremental cost per quality-adjusted life year (QALY) gained is estimated to range from around 20 pounds sterling to around 440 pounds sterling.

When including the healthcare savings from preventing disease and other conditions, all the brief interventions result in net cost savings to the health service compared with no intervention. They also result in a better quality of life for participants. The incremental net costs saved per QALY gained vary from around 750 pounds sterling to around 3150 pounds sterling.

A number of assumptions were made which could under or overestimate the cost per QALY: the cost-effectiveness estimates were not sensitive to these assumptions (see modelling report for further details [see "Availability of Companion Documents" field]).

Overall, brief interventions in primary care were found to be cost effective.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The draft guidance, including the recommendations, was released for consultation in January/February 2006. The Public Health Interventions Advisory Committee met in February 2006 to consider stakeholder comments and to revise the recommendations accordingly. The guidance was signed off by the National Institute for Health and Clinical Excellence (NICE) Guidance Executive in March 2006.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Brief Interventions in Primary Care

Brief interventions involve opportunistic advice, discussion, negotiation, or encouragement. They are commonly used in many areas of health promotion, and are delivered by a range of primary and community care professionals. The interventions vary from basic advice to more extended, individually-focused attempts to identify and change factors that influence activity levels. The Public Health Interventions Advisory Committee (PHIAC) determined there is sufficient evidence to recommend the use of brief interventions in primary care.

Recommendation 1

Primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on 5 days of the week (or more)*. They should use their judgment to determine when this would be inappropriate (for example, because of medical conditions or personal circumstances). They should use a validated tool, such as the Department of Health's forthcoming general practitioner physical activity questionnaire (GPPAQ), to identify inactive individuals.

* The practitioner may be a general practitioner (GP) or another professional with specific responsibility for providing encouragement or advice. This will depend on local conditions, professional interest, and resources. Health trainers are likely to have a role in offering brief advice. "Inactive" is used as shorthand for those failing to reach the Chief Medical Officer for England's (CMO's) recommendation. "Advise" is used as shorthand for "encourage, advise, discuss, negotiate"—see definition of brief interventions above.

Recommendation 2

When providing physical activity advice, primary care practitioners should take into account the individual's needs, preferences, and circumstances. They should agree goals with them. They should also provide written information about the benefits of activity and the local opportunities to be active. They should follow them up at appropriate intervals over a 3- to 6-month period.

Recommendation 3

Local policy makers, commissioners, and managers, together with primary care practitioners, should monitor the effectiveness of local strategies and systems to promote physical activity. They should focus, in particular, on whether or not opportunistic advice is helping to increase the physical activity levels of people from disadvantaged groups, including those with disabilities (and thereby tackling health inequalities). They should also assess how effective professionals from a range of disciplines are at raising long-term physical activity levels among these groups.

Recommendation 4

Local policy makers, commissioners, and managers, together with primary care practitioners, should pay particular attention to the needs of hard to reach and disadvantaged communities, including minority ethnic groups, when developing service infrastructures to promote physical activity.

Exercise Referral Schemes

An exercise referral scheme directs someone to a service offering an assessment of need, development of a tailored physical activity programme, monitoring of progress, and a follow-up. The Fitness Industry Association estimates that there are around 600 schemes in England. They involve participation by a number of professionals and may require the individual to go to an exercise facility such as a leisure centre.

The PHIAC determined that there was insufficient evidence to recommend the use of exercise referral schemes to promote physical activity, other than as part of research studies where their effectiveness can be evaluated.

Recommendation 5

Practitioners, policy makers, and commissioners should only endorse exercise referral schemes to promote physical activity that are part of a properly designed and controlled research study to determine effectiveness (For further information, see the "Description of the Implementation Strategy" field). Measures should include intermediate outcomes such as knowledge, attitudes and skills, as well as measures of physical activity levels. Individuals should only be referred to schemes that are part of such a study.

Pedometers, Walking and Cycling Schemes

Pedometers are a common aid to increasing physical activity through walking. Much of the research about pedometers has involved comparing the validity and reliability of different models. This guidance focuses on how effective they are at increasing people's physical activity levels.

In the context of this guidance, walking and cycling schemes are defined as organised walks or rides. Public health practitioners have increasingly become involved in these types of project in recent years.

PHIAC determined that there was insufficient evidence to recommend the use of pedometers and walking and cycling schemes to promote physical activity, other than as part of research studies where effectiveness can be evaluated. However, professionals should continue to promote walking and cycling (along with other forms of physical activity, which could include gardening, household activities and recreational activities) as a means of incorporating regular physical activity into people's daily lives (see Recommendation 1).

Recommendation 6

Practitioners, policy makers, and commissioners should only endorse pedometers and walking and cycling schemes to promote physical activity that are part of a properly designed and controlled research study to determine effectiveness (For further information, see the "Description of the Implementation Strategy" field). Measures should include intermediate outcomes such as knowledge, attitude, and skills, as well as measures of physical activity levels.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type and quality of supporting evidence is identified and graded for each recommendation (see appendix A of the original guideline document).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate use of interventions to increase physical activity
- Physical activity can help prevent and manage over 20 conditions and diseases including coronary heart disease, stroke, diabetes and cancer. It also promotes mental well-being and helps people to manage their weight.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The Healthcare Commission assesses the performance of National Health Service (NHS) organisations in meeting core and developmental standards set by the Department of Health (DH) in "Standards for Better Health," issued in July 2004. The implementation of National Institute for Health and Clinical Excellence (NICE) public health guidance will help organisations meet the standards in the public health domain.

NICE has developed tools to help organisations implement the guidance (see "Availability of Companion Documents" field).

- Costing tools
    - Costing report to estimate the national savings and costs associated with implementation
    - Costing template to estimate the local costs and savings involved

- Implementation advice on how to put the guidance into practice and national initiatives which support this locally
- Audit criteria to monitor local practice

IMPLEMENTATION TOOLS

Audit Criteria/Indicators
Chart Documentation/Checklists/Forms
Quick Reference Guides/Physician Guides
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

National Institute for Health and Clinical Excellence (NICE). Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 Mar. 37 p. (Public health intervention guidance; no. 2).

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Mar

GUIDELINE DEVELOPER(S)

National Institute for Health and Clinical Excellence (NICE) - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

National Institute for Health and Clinical Excellence (NICE)

GUIDELINE COMMITTEE

NICE Project Team

Public Health Interventions Advisory Committee (PHIAC)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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Public Health Interventions Advisory Committee (PHIAC) Members: Mrs Cheryll Adams, Professional Officer for Research and Practice, Development with the Community Practitioners' and Health Visitors' Association (CPHVA); Professor Ron Akehurst, Professor of Health Economics and Dean of the School of Health and Related Research (ScHARR), University of Sheffield; Professor Sue Atkinson, Regional Director of Public Health for London, Health Adviser to Mayor and Greater London Authority; Professor Michael Bury, Emeritus Professor of Sociology at the University of London and Honorary Professor of Sociology at the University of Kent; Professor Simon Capewell, Chair of Clinical Epidemiology, University of Liverpool; Professor K K Cheng, Professor of Epidemiology, University of Birmingham; Mr Philip Cutler, Forums Support Manager, Bradford Alliance on Community Care; Professor Brian Ferguson, Director of the Yorkshire and Humber Public Health Observatory; Dr Ruth Hall, Director of Public Health for Avon, Gloucestershire and Wiltshire Strategic Health Authority; Ms Amanda Hoey, Director, Consumer Health Consulting Limited; Mr Andrew Hopkin, Senior Assistant Director for Derby City Council; Dr Ann Hoskins, Director of Public Health for Cumbria and Lancashire Strategic Health Authority; Professor David R Jones, Professor of Medical Statistics in the Department of Health Sciences, University of Leicester; Dr Matt Kearney, General Practitioner, Castlefields, Runcorn, GP Public Health Practitioner, Knowsley; Ms Valerie King, Designated Nurse for Looked After Children for Northampton PCT, Daventry and South Northants PCT and Northampton General Hospital, Public Health Skills Development Nurse for Northampton PCT; Dr Catherine Law (Chair) Reader in Children's Health, Institute of Child Health, University College, London; Ms Sharon McAteer, Health Promotion Manager, Halton PCT; Professor Klim McPherson, Visiting Professor of Public Health Epidemiology, Department of Obstetrics and Gynaecology, University of Oxford; Professor Susan Michie, Professor of Health Psychology, BPS Centre for Outcomes Research & Effectiveness, University College, London; Ms Jane Putsey, Lay Representative, Chair of Trustees of the Breastfeeding Network for Cumbria and Lancashire Strategic Health Authority; Dr Mike Rayner, Director of British Heart Foundation Health Promotion Research Group, Department of Public Health, University of Oxford; Mr Dale Robinson, Chief Environmental Health Officer for South Cambridgeshire District Council; Professor Mark Sculpher, Professor of Health Economics at the Centre for Economics (CHE), University of York; Dr David Sloan, Director of Health Improvement & Public Health for City & Hackney Teaching PCT; Dr Michael Varnam, General Practitioner with the Community of Inner Nottingham; Dr Dagmar Zeuner, Consultant in Public Health with Islington PCT

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the Public Health Interventions Advisory Committee are required to make an oral declaration all potential conflicts of interest at the start of the consideration of each public health intervention appraisal. These declarations will be minuted and published on the National Institute for Health and Clinical Excellence (NICE) website.

Members are required to provide in writing an annual statement of current conflicts of interests, in accordance with the Institute's policy and procedures.

Potential members of the Public Health Programme Development Groups (PDG), and any individuals having direct input into the guidance (including expert peer reviewers), are required to provide a formal written declaration of personal interests. A standard form has been developed for this purpose which also includes the Institute's standard policy for declaring interests. This declaration of interest form should be completed before any decision about the involvement of an individual is taken.

Any changes to a Group member's declared conflicts of interests should also be recorded at the start of each PDG meeting. The PDG Chair should determine whether these interests are significant. If a member of the PDG has a possible conflict of interest with only a limited part of the guidance development or recommendations, that member may continue to be involved in the overall process but should withdraw from involvement in the area of possible conflict. This action should be documented and be open to external review. If it is considered that an interest is significant in that it could impair the individual's objectivity throughout the development of public health guidance, he or she should not be invited to join the group.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) format from the National Institute for Health and Clinical Excellence (NICE) Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. Quick reference guide. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 Mar. 4 p. (Public Health Intervention Guidance 2). Available in Portable Document Format (PDF) from the National Institute for Health and Clinical Excellence (NICE) Web site.

- Costing report: four commonly used methods to increase physical activity. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 May. 23 p. (Public Health Intervention Guidance 2). Available in Portable Document Format (PDF) from the NICE Web site.
- Costing template: four commonly used methods to increase physical activity. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 May. Variable p. (Public Health Intervention Guidance 2). Available from the NICE Web site.
- Implementation advice: four commonly used methods to increase physical activity. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 May. 23 p. (Public Health Intervention Guidance 2). Available in Portable Document Format (PDF) from the NICE Web site.
- Audit criteria: four commonly used methods to increase physical activity. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 May. Variable p. (Public Health Intervention Guidance 2). Available from the NICE Web site.
- Rapid review of the economic evidence of physical activity interventions. Economics modelling report. London (UK): Matrix research and consultancy; 2006 April. 33 p. Available in Portable Document Format (PDF) from the NICE Web site.
- A rapid review of the effectiveness of brief interventions in primary care to promote physical activity in adults. London (UK): NICE Public Health Collaborating Centre—Physical activity; 2006 Jan 25. 49 p. Available in Portable Document Format (PDF) from the NICE Web site.
- A rapid review of the effectiveness of exercise referral schemes to promote physical activity in adults. London (UK): NICE Public Health Collaborating Centre—Physical activity; 2006 May. 42 p. Available in Portable Document Format (PDF) from the NICE Web site.
- A rapid review of the effectiveness of pedometer interventions to promote physical activity in adults. London (UK): NICE Public Health Collaborating Centre—Physical activity; 2006 Jan 25. 35 p. Available in Portable Document Format (PDF) from the NICE Web site.
- A rapid review of the effectiveness of community-based walking and cycling programmes to promote physical activity in adults. London (UK): NICE Public Health Collaborating Centre—Physical activity; 2006 Jan 25. 34 p. Available in Portable Document Format (PDF) from the NICE Web site.
- Methods for development of NICE public health guidance. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 Mar. 131 p. Available in Portable Document Format (PDF) from the NICE Web site.
- The public health guidance development process. An overview for stakeholders including public health practitioners, policy makers and the public. London (UK): National Institute for Health and Clinical Excellence (NICE); 2006 Mar. 46 p. Available in Portable Document Format (PDF) from the NICE Web site.

Print copies: Available from the National Health Service (NHS) Response Line 0870 1555 455. ref: N1015. 11 Strand, London, WC2N 5HR.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 23, 2006. The information was verified by the guideline developer on February 6, 2007.

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